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The Patent Office

Concept House

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REC'D 27 OCT 2000

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Signed

Dated

3 OCT 2000

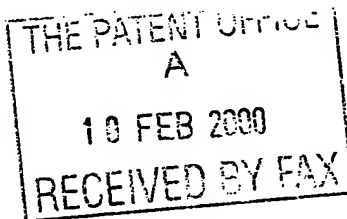
**The Patent Office**

10FEB00 0512219-1 D02481  
P01/770010.00-0002996.7

Patent Act 1977  
(Rule 6)

# Request for grant of a patent

(See the notes on the back of this form. You can also get an explanatory leaflet from the Patent Office to help you fill in this form)



The Patent Office

Cardiff Road  
Newport  
Gwent NP23 5RH

1. Your reference

B245561 /AHO/PPP

2. Patent application number

(The Patent Office will fill in this part)

**0002996.7**

[10 FEB 2000]

3. Full name, address and postcode of the or of each applicant (underline all surnames)

Teknek Electronics Limited  
River Drive  
Inchinnan Business Park  
Renfrewshire  
PA4 9RT

Patents ADP number (if you know it)

7641947001

If the applicant is a corporate body, give the country/state of its incorporation

United Kingdom

4. Title of the invention

"Web Guidance System"

5. Name of your agent (if you have one)

Murgitroyd & Company

"Address for service" in the United Kingdom to which all correspondence should be sent (including the postcode)

373 Scotland Street  
GLASGOW  
G5 8QA

Patents ADP number (if you know it)

1198013 ✓

If you are declaring priority from one or more earlier patent applications, give the country and the date of filing of the or of each of these earlier applications and (if you know it) the or each application number

Country

Priority application number  
(if you know it)

Date of filing  
(day / month / year)

7. If this application is divided or otherwise derived from an earlier UK application, give the number and the filing date of the earlier application

Number of earlier application

Date of filing  
(day / month / year)

8. Is a statement of inventorship and of right to grant of a patent required in support of this request? (Answer 'Yes' if:

yes

- a) any applicant named in part 3 is not an inventor, or
  - b) there is an inventor who is not named as an applicant, or
  - c) any named applicant is a corporate body
- See note (d))

Patents Form 1/77

## Patents Form 1/77

9. Enter the number of sheets for any of the following items you are filing with this form. Do not count copies of the same document

Continuation sheets of this form	-
Description	5
Claim(s)	-
Abstract	-
Drawing(s)	10

10. If you are also filing any of the following, state how many against each item.

Priority documents	-
Translations of priority documents	-
Statement of inventorship and right to grant of a patent (Patents Form 7/77)	-
Request for preliminary examination and search (Patents Form 9/77)	-
Request for substantive examination (Patents Form 10/77)	-
Any other documents (please specify)	-

11.

I/We request the grant of a patent on the basis of this application.

Signature

(Murgitroyd &amp; Company)

Date

10.2.2000

12. Name and daytime telephone number of person to contact in the United Kingdom

Paolo Pacitti

0141 307 8400

## Warning

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## Notes

- If you need help to fill in this form or you have any questions, please contact the Patent Office on 0645 500505.
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Patents Form 1/77

1 "Web Guidance System"

2

3 The present invention relates to web guidance system  
4 and in particular to web guidance system being capable  
5 of web cleaning.

6

7 Webs are thin, generally plastic materials and web  
8 guidance systems are well known in the art and are  
9 typically used for webs of 3 to 4 inches in width.  
10 Webs of this size are prone to run off track easily and  
11 the web guidance systems are used to keep the web on a  
12 desired track.

13

14 Web cleaning systems are also known in the art, these  
15 cleaning systems being used to remove particulates from  
16 at least one surface of the web.

17

18 It is desirable to have the web cleaning system  
19 integral with the web guidance system. When both sides  
20 of the web require cleaning then it would be desirable  
21 to have one of the web guidance rollers acting also as  
22 a cleaning roller, however, because the cleaning  
23 rollers have elastomeric material wrapped around them,  
24 the surface is compressible. This compressibility  
25 means that when the web is placed in tension over the

1 cleaning roller both the web guidance system and the  
2 web cleaning system can malfunction.

3  
4 According to a first aspect of the present invention,  
5 there is provided a web guidance system having at least  
6 one guiding roller controllable to effect the guiding  
7 of the web, the system including web cleaning apparatus  
8 having a first cleaning roller having an outer surface  
9 coated with a material having a degree of tackiness  
10 capable of removing particulates from one surface of  
11 the web.

12  
13 According to a second aspect of the present invention  
14 there is provided web guidance system as described in  
15 the last preceding paragraph and further including a  
16 first back-up roller adapted to engage the cleaning  
17 roller and having a surface coated with a material  
18 having a degree of tackiness greater than that of the  
19 cleaning roller and capable of removing particulates  
20 from the cleaning roller.

21  
22 According to a third aspect of the present invention  
23 there is provided a web guidance system described in  
24 either of the last two preceding paragraphs, wherein  
25 said guiding roller is constituted by a second cleaning  
26 roller for cleaning the other surface of the web, said  
27 second cleaning roller having an outer surface coated  
28 with a material having a degree of tackiness capable of  
29 removing particulates from the other surface of the  
30 web.

31  
32 According to a fourth aspect of the present invention  
33 there is provided a web guidance system as described in  
34 the last preceding paragraph, the apparatus further  
35 comprising a second back-up roller adapted to engage  
36 the second cleaning roller and having a surface coated

1 with a material having a degree of tackiness being  
2 greater than said degree of tackiness of the second  
3 cleaning roller, said second back-up roller being  
4 similar to said first back-up roller.

5  
6 Preferably, the second cleaning roller has a surface  
7 hardness greater than the surface hardness of said  
8 first cleaning roller.

9  
10 Embodiments of the present invention will now be  
11 described, by way of example only, with reference to  
12 the accompanying drawings, in which:

13  
14 Fig. 1 is a schematic isometric view of a web  
15 guidance system as known in the art; and

16  
17 Fig. 2 is a schematic isometric view of one  
18 embodiment of the present invention.

19  
20 Referring to Fig. 1, there is illustrated web guiding  
21 apparatus 10 as is known in the art. The web guiding  
22 apparatus 10 comprises a mounting plate 11, being  
23 capable of mounting a first guiding roller 12 and a  
24 second guiding roller 13. A web 15 is placed in  
25 tension over the first and second guiding rollers 12  
26 and 13. The web guiding apparatus 10 further comprises  
27 an edge sensor 14 for detecting the edge of the web and  
28 ensuring that the web 15 is running on track. When the  
29 sensor 14 detects that the web 15 is moving off track  
30 then a suitable control system 16 is activated. The  
31 control system 16 is arranged to rotate the mounting  
32 plate 11 in a horizontal plane which contains the axes  
33 of the guiding rollers 12 and 13 in order to cause the  
34 web 15 to track in the desired direction. The sensor  
35 14 is on a feedback loop which continues to operate the  
36 linear actuator 16 until the web 15 is in the desired

1 location.

2

3 Referring to Fig. 2, there is illustrated one  
4 embodiment of a web guidance system made in accordance  
5 with the present invention which includes web cleaning  
6 apparatus 20, whereby both the upper and lower surfaces  
7 of the web 25 may be cleaned. The apparatus 20  
8 comprises mounting plates 21A and 21B adapted to mount  
9 an input roller 22, an upper cleaning roller 23A, a  
10 lower cleaning roller 23B, a first back-up roller 24A  
11 and a second back-up roller 24B.

12

13 The web 25 is fed over the input roller 22 then between  
14 the upper and lower cleaning rollers 23A and 23B. The  
15 web then passes an anti-static device 26, which removes  
16 static built up through the system, and a sensing  
17 system (not shown) which operates in the same manner as  
18 the sensing system of the prior art. The sensing  
19 system also adjusts the apparatus as in the prior art,  
20 in order to keep the web 25 on the desired track.

21

22 As will be evident, the lower cleaning roller 23B also  
23 acts as a web guiding roller equivalent to the web  
24 guiding roller 12 of the prior art design shown in  
25 Fig. 1. In order for the web guidance aspect of this  
26 embodiment to operate efficiently, the web 25 must be  
27 in tension over the guiding roller 23B.

28

29 Normally, cleaning rollers, by their nature, are not as  
30 hard as guiding rollers, because the cleaning rollers  
31 generally use elastomeric materials and have a degree  
32 of "give". This means that when the web 25 is put in  
33 tension over the lower cleaning roller 23B, it is  
34 compressed and the web guiding system may not operate  
35 effectively.

36

1 However, in this present embodiment, the surface of the  
2 lower cleaning roller 24B is harder than the surface of  
3 the upper cleaning roller 23A. Therefore, the lower  
4 cleaning roller 23B has less "give" than the upper  
5 cleaning roller 23A thus allowing the guidance aspect  
6 of the embodiment to function properly.

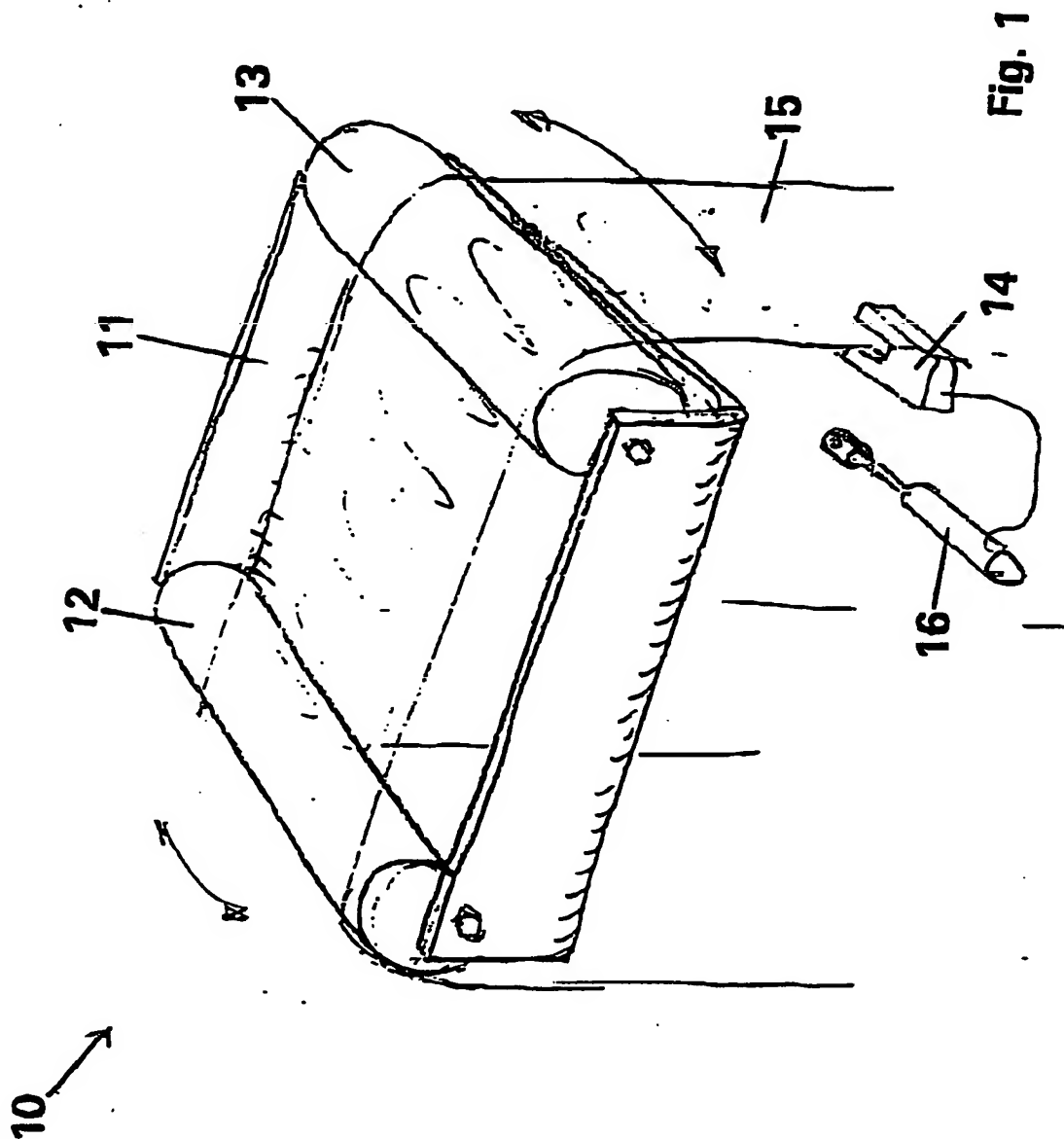
7  
8 The web cleaning system operates in a manner that is  
9 well known in the prior art, that is, having upper and  
10 lower cleaning rollers 23A and 23B respectively, both  
11 having first degrees of adhesive tackiness to remove  
12 particulates from the upper and lower surfaces of the  
13 web 25, respectively. These upper and lower cleaning  
14 rollers 23A and 23B engage first and second back-up  
15 rollers 24A and 24B, respectively. These first and  
16 second back-up rollers 24A and 24B have second degrees  
17 of adhesive tackiness for removing the particulates  
18 from the upper and lower cleaning rollers 23A and 23B.

19  
20 Modifications and improvements may be made to the  
21 foregoing within the scope of the present invention.  
22

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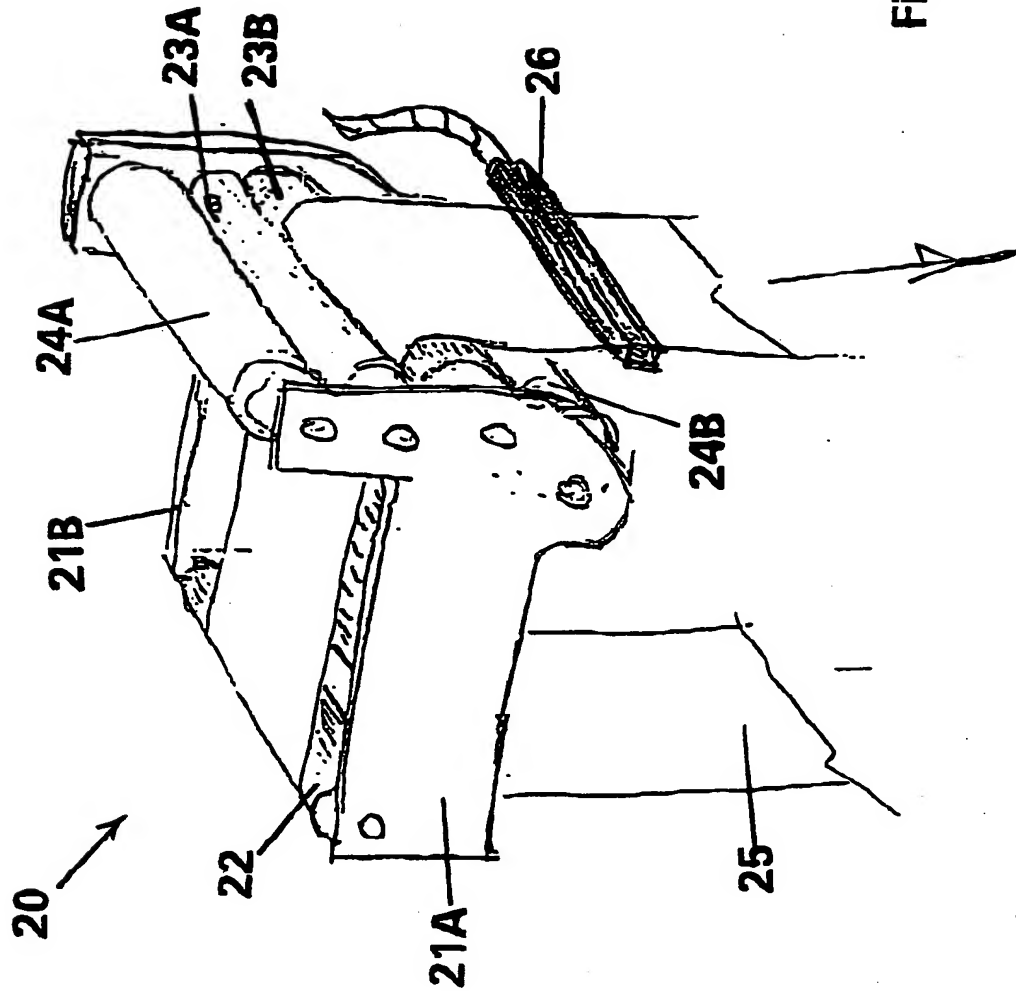
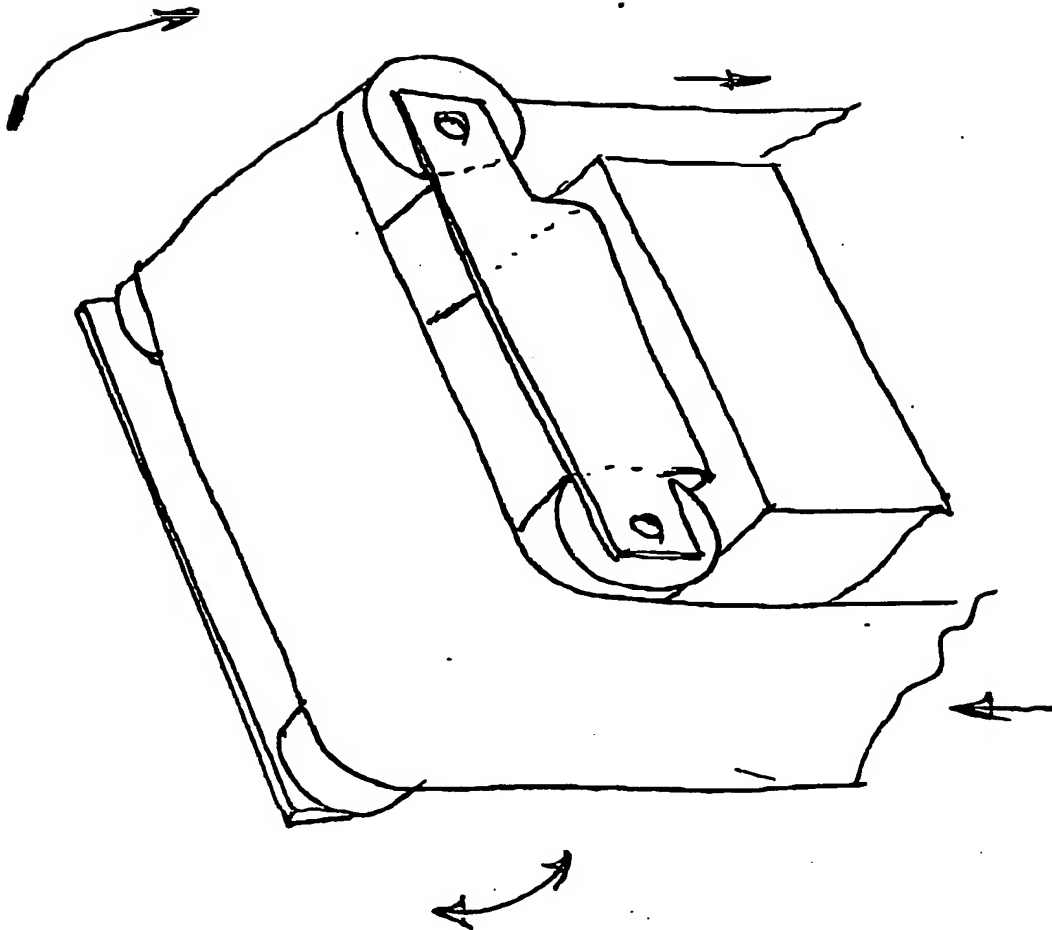


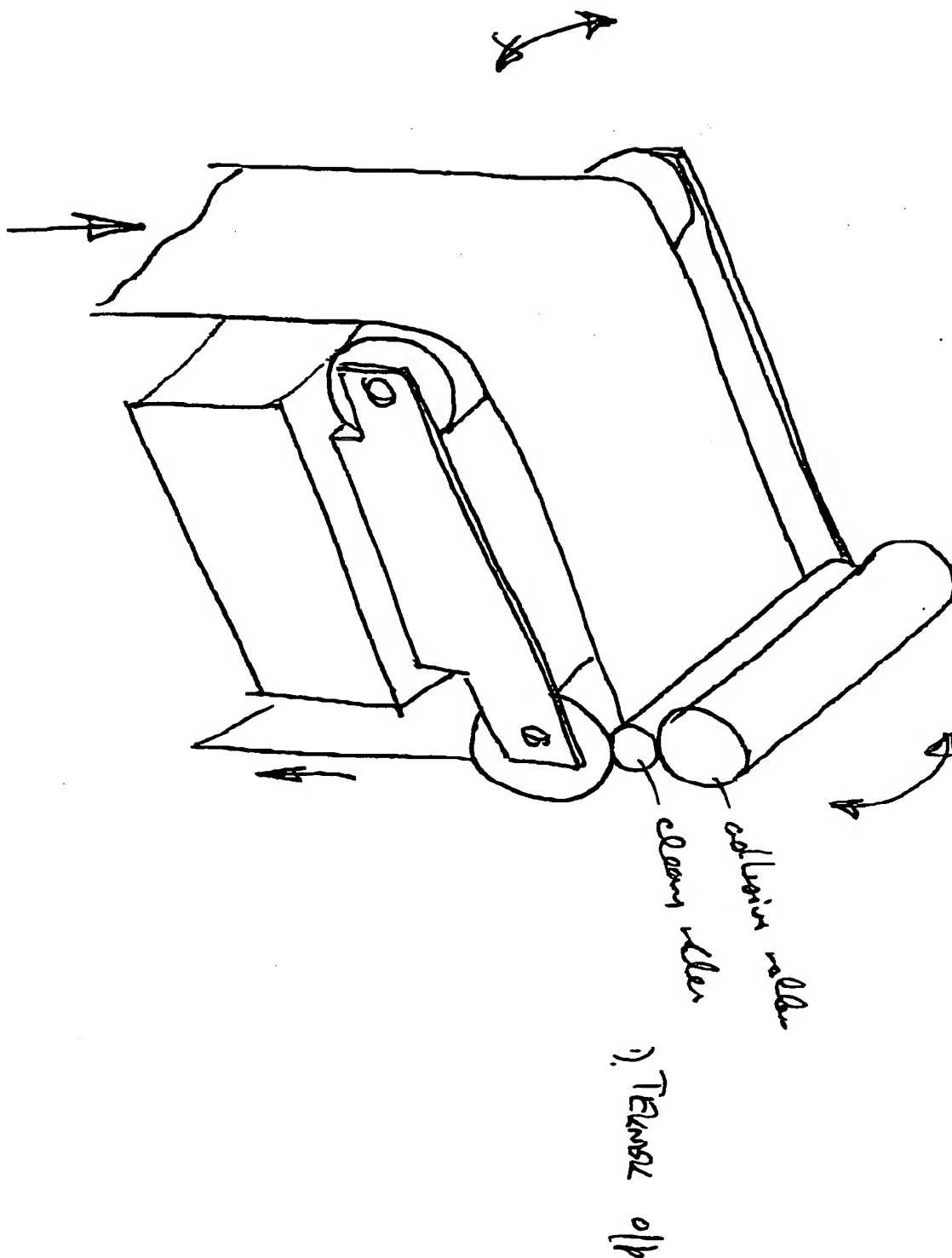
Fig. 2

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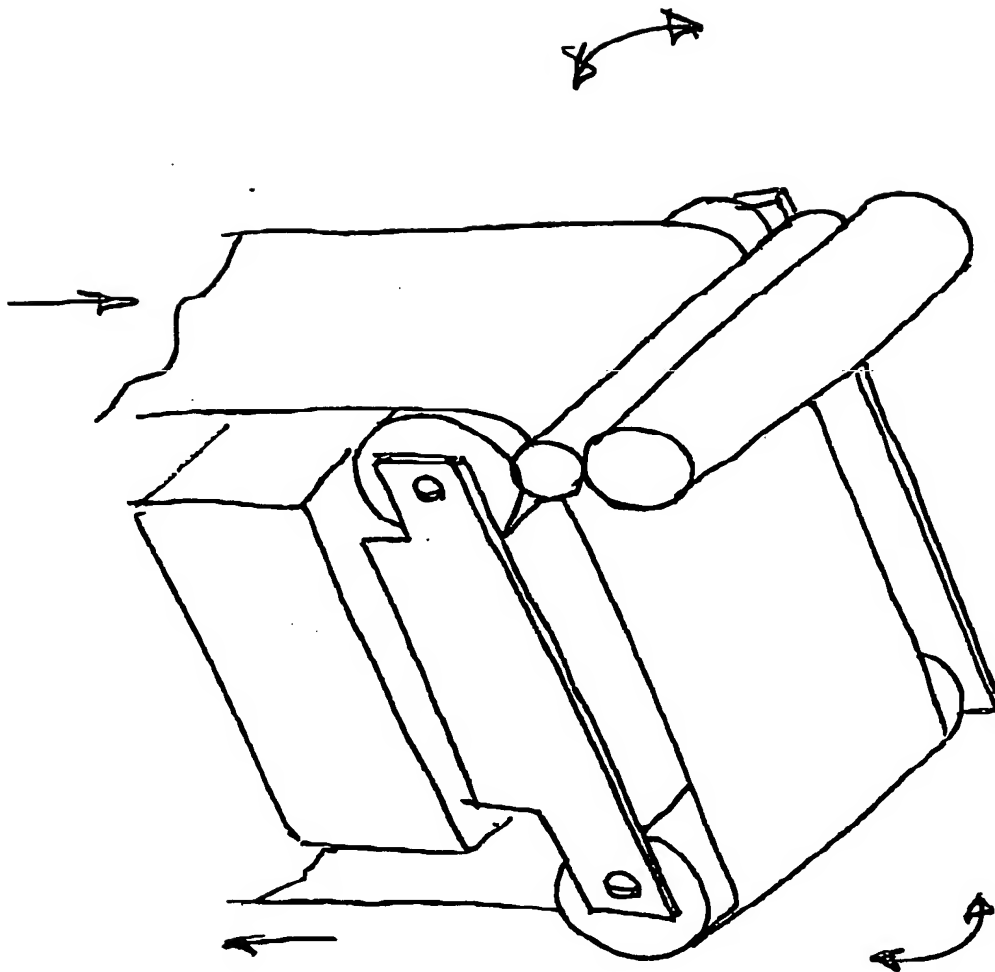
normal web-guidance will  
 rotating frame will  
 i/p → o/p rollers  
 non hole band.



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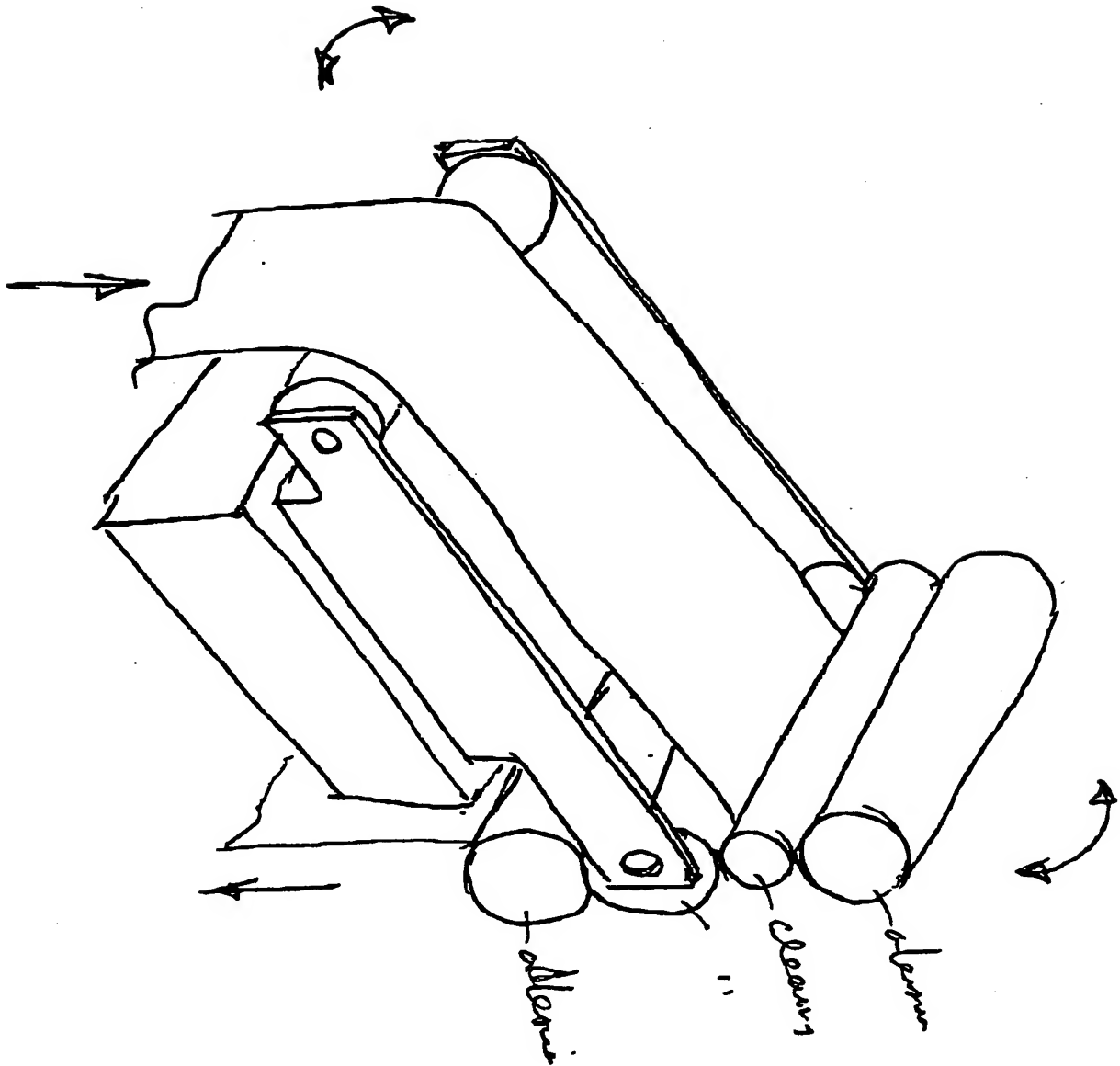


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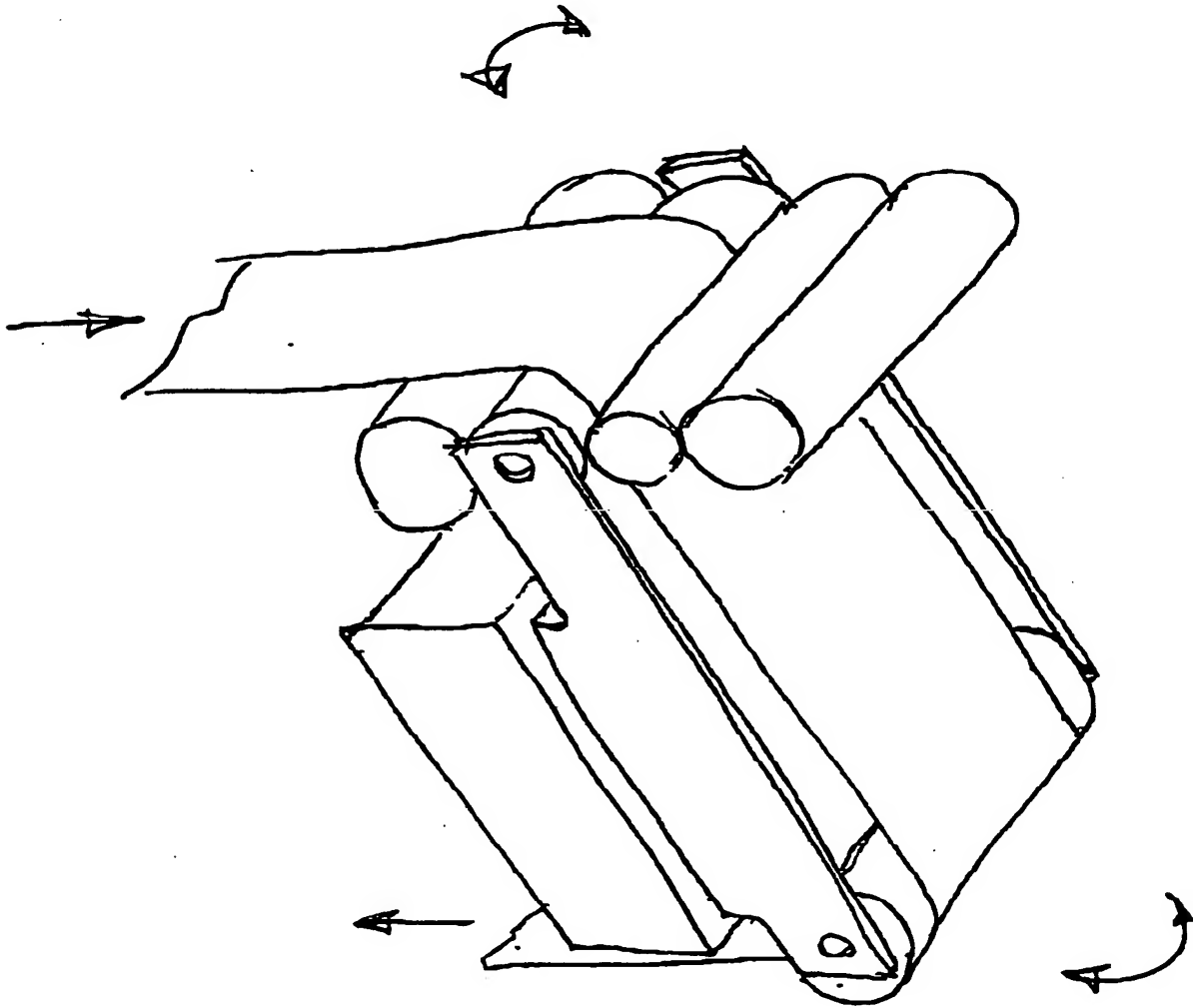
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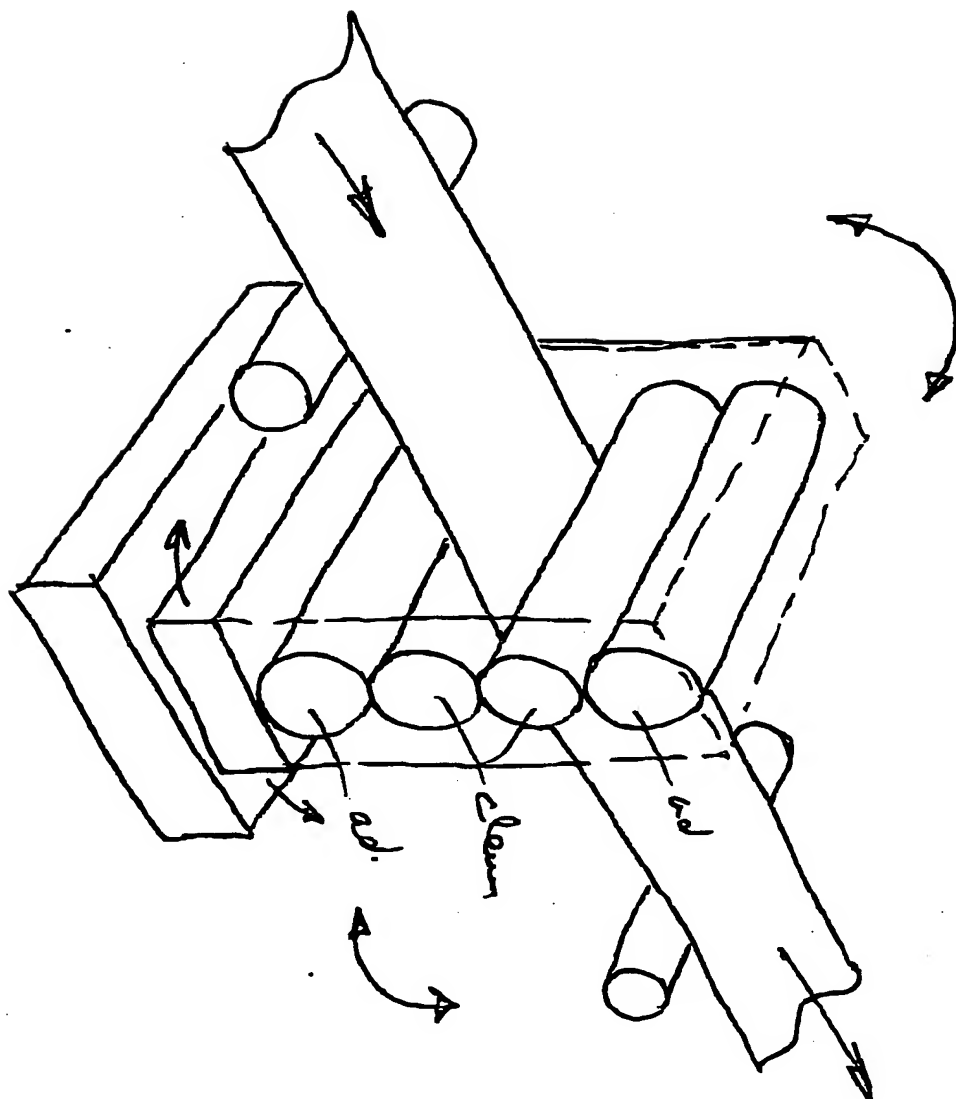
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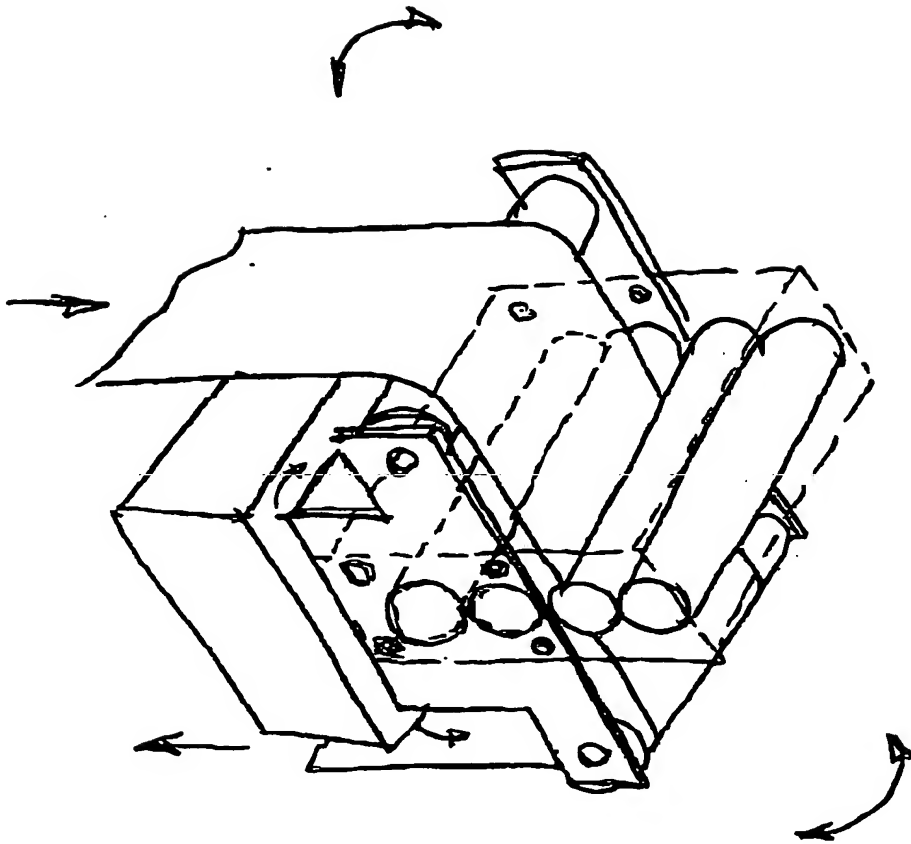


3) TEMPER

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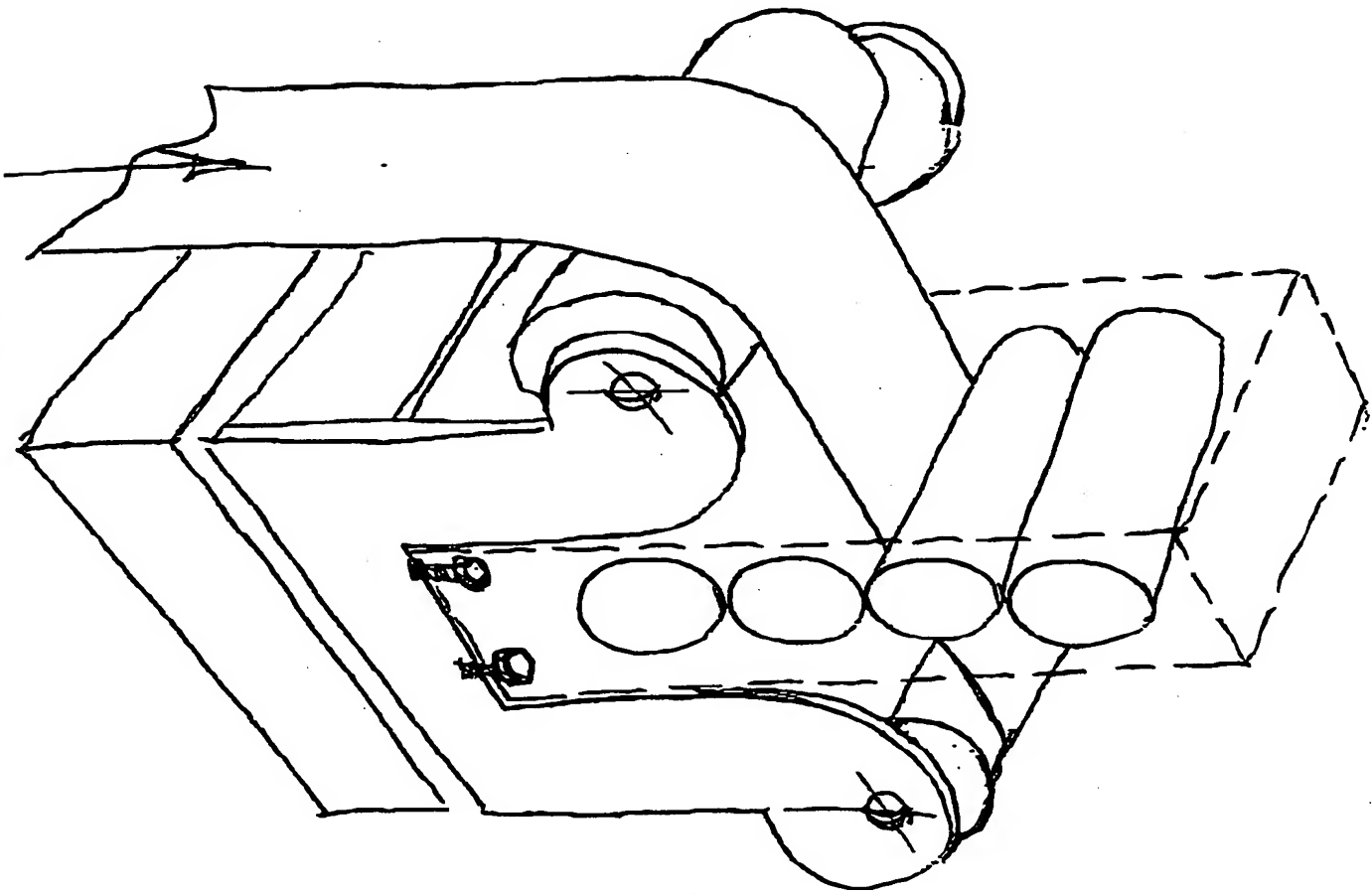


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f) Travel  
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